

**Taxable Income, Tax-Book Differences and Earnings Quality**

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## **Taxable Income, Tax-Book Differences and Earnings Quality**

### **Abstract**

The financial scandals (Enron, WorldCom) of the past few years have emphasized the importance for investors to consider the quality of earnings reported by listed entities. For that purpose, reported earnings are often compared to figures such as cash flow from operations (CFO). More recently, US researchers have attempted to measure earnings quality using taxable income and tax-book differences.

Taxable income and tax-book differences could help assessing earnings quality since it would be unusual for an entity to report high earnings while showing little tax liability. Also, measurement of taxable income is usually not as flexible as reported earnings. An unusual gap between these two figures may indicate financial statement manipulations, aggressive tax behaviour or less persistent reported earnings i.e. of inferior quality.

Using a data set of Canadian firms, the paper investigates whether taxable income and tax-book differences provide additional information (beyond CFO and accruals) to investors in assessing earnings quality. The results support our hypotheses.

In many European countries, there is a strong link between accounting earnings and taxable income as financial accounting complies to a great extent with the tax law. The adoption of the IFRS by European countries may have a major impact on corporate tax bases since several countries may have to adopt tax rules (not GAAP) in line with their economic and political objectives; lessening the relationship between the two figures. This paper contributes to the literature in this domain.

**Keywords:** Taxable Income, Earnings Quality, GAAP, IFRS, Cash Flows from Operations

## **Taxable Income, Tax-Book Differences and Earnings Quality**

### **Introduction**

In the recent years, there has been a heated debate in the US involving high profile public companies that paid little or no taxes while reporting excessive earnings. This debate was sparked by corporate scandals and by the press, which claimed that many companies did not pay their fair share of income taxes. For instance, from 1996 to 1999, Enron reported to the tax authorities no taxable income whereas it disclosed \$ 2.3 billion in profits for accounting purpose. Similarly, the WorldCom affair was evoked, where Andersen was blamed for failing to question the gap between reported earnings and taxable income. The debate about the discrepancies between taxable amount and reported earnings has not yet attracted the attention of Canadian researchers. In contrast, researchers, analysts, and regulators in the US have addressed the issue extensively, particularly subsequent to the alleged fraudulent reporting cases.

The difference between taxable income and reported earnings (tax-book differences) results from the selection of accounting rules that are different for tax purposes and financial reporting. This use of different rules is not illegal. Firms can exploit these inconsistencies in order to inflate their reported earnings while minimizing their taxes. Some of the tax-book differences arise from GAAP requirements that are not allowed for tax purposes e.g. provisions for warranty. Others originate from differences in measurement methods; for example, depreciation methods under GAAP rules are based on management's judgment whereas for taxes these methods are generally prescribed.

In the same way as cash flows and accruals, taxable income and tax-book differences can be informative about the quality and the persistence of reported earnings. There are three main advantages of using this information as a benchmark of earnings quality. First, taxable income is less subject to falsification than cash flows from operations, which are directly affected by sale of receivables, accounts receivable collection, and delays in the settlement of payables. Second, taxable income reflects management's optimism. Unlike earnings and cash flows, management hesitates to artificially inflate taxable income.

Finally, the measurement of taxable income is not as flexible as for reported earnings. Management's judgment and fair value measurement play a major role in determining net earnings, thus increasing the risk of biased information. Taxable income is less likely to be manipulated by management and unusual tax-book differences may indicate financial statements manipulation or aggressive tax behaviour.

This paper investigates whether taxable income and tax-book differences could be used to assess firms' earnings quality. It also examines if taxable income provides additional information over traditional benchmark such as cash flows from operations. The study is performed using a sample of Canadian firms. This is particularly interesting in the European context as Canadian GAAP are closer to International Financial Reporting Standards (IFRS) than US GAAP. The adoption of the IFRS by European countries may have a major impact on corporate tax bases since there is a strong link between reported earnings and taxable income. In these countries, financial accounting complies to a great extent with the tax law. To pursue their economic and political objectives, several European countries may have to adopt tax rules that are not GAAP; lessening the relationship between reported earnings and taxable income and thus, increasing tax-book differences.

The contribution of this study to the accounting literature is twofold. First, it seeks to enhance our understanding of the relation between reported earnings, cash flows from operations and taxable income. Second, it contributes to improve our knowledge of the relationship between accruals and tax-book differences.

This paper is organized as follows. The next section reviews the literature in this domain. The third section discusses the hypotheses and the methodology. The fourth section describes the sample selection and analyzes the results. The last section summarizes the conclusions.

## **Literature Review**

The tax-book differences discussion has to be made in the context of financial statements objectives. On one hand, for reporting purposes, financial statements communicate information that is useful to investors, members, contributors, creditors and other users in making their resource allocation decisions and/or assessing management stewardship.<sup>1</sup> On the other hand, tax authorities aim to establish a basis for the computation of equitable tax liabilities for firms and individuals. The tax revenue collected serves to fund government operations. The tax authorities draft rules in order to help governments implementing its fiscal policies by providing firms with incentives to engage in particular activities such as R&D. This incentive often translates into a reduction of taxes payable.

US researchers have examined various aspects and dimensions of taxable income and its relation to reported earnings. Some authors have examined whether taxable income can be used to evaluate earnings quality and the persistence of earnings (Shackelford and Shevlin, 2001; Mills and Newberry, 2001; Joos, Pratt, and Young, 2002; Lev and Nissim, 2002; Philips, Pincus, and Rego, 2003; Hanlon, 2003). Other researchers have assessed the magnitude and trends of tax-book differences (Plesko, 2004; Manzon and Plesko, 2001; Mills, Newberry, and Trautman, 2002; Lev and Nissim, 2002).

### **Taxable income as benchmark to assess earnings quality**

According to Schipper and Vincent (2002), there is neither an agreed-upon meaning assigned to earnings quality nor a generally accepted approach to measuring earnings quality. Therefore, investors use different benchmarks to assess the quality of a firm's earnings. The purpose of these benchmarks is to verify two specific characteristics of reported earnings. The first concerns the relevance of earnings to decision-making. The more net earnings reflect the firm's economic performance, the more they are perceived as being of good quality and the more financial statements users will be able to rely on them for decision-making. The second characteristic is the absence of management bias. Net earnings are compared to other figures that require fewer estimates and are thus less

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<sup>1</sup> CICA Handbook, Section 1000 par. 15.

likely to be biased, such as cash flow from operations. The more net earnings are consistent with cash flows from operations, the more they are deemed to be of good quality. Related to these characteristics is the predictive value of earnings or its persistence.

According to Eilifsen, Knivsfla and Sættem (1999), there must be a cost associated with overstating reported earnings. Otherwise, all firms would report the highest possible income level. Corporate taxation creates a trade-off between the benefit of being identified as a high value firm and the additional tax liability from overstating income. In equilibrium, the manager of a high value firm finds it optimal to overstate income because the payment of an excess corporate tax is the only credible way to signal high value. The manager of the low value firm does not overstate earnings and simply reports the minimum level of income to avoid a higher tax burden.

A reduction in taxable income is generally perceived as desirable whereas a decrease in reported earnings reduces firms' profitability. Therefore, firms have the incentive to play with both issues i.e. to report high earnings to shareholders and creditors to boost market value and to disclose a low taxable income to increase cash flows by lowering tax payments. For instance, several articles in the financial press pointed out that Enron did not pay income taxes for several years prior to going bankrupt in 2001, while it had reported high earnings during that period.

Lev and Nissim (2002) report that, consistent with prospect theory, investors appear to use the information of taxable income when valuing firms with high quality of earnings<sup>2</sup>. They state that taxable income could serve as a reality check for the validity of reported earnings and that it could be a better benchmark (than cash flows) for assessing the persistence of earnings. A significant difference between reported earnings and taxable

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<sup>2</sup> Prospect theory follows the expected utility theory which suggests that, when faced with alternatives, decision makers make choices by weighing the outcomes of each alternative by its probability of occurring and selecting the alternative that provides the maximum payoff. Prospect theory predicts that people will tend to gamble in losses; that is, investors will tend to hold on to losing positions in the hope that prices will eventually recover. Prospect theory also predicts that investors will be risk averse in gains. When they make money, investors will move too quickly to "take some chips off the table."

income may suggest that the accounting income is not persistent over time and, consequently, of inferior quality.

Similar to other research, we use the persistence of earnings as an indication of quality (Hanlon (2005); Lev and Nissim (2002)). Taxable income would be a good predictor of the quality of earnings if it is informative about firms' future performance.

Typical benchmarks for assessing earnings quality and earnings management are not derived from tax measures but from financial reporting. They include cash flows from operations and non-discretionary accruals. Taxable income may be used to evaluate earnings quality since it is based on the same general ledger as reported earnings. To the extent that taxable income is less subject to manipulations, it incorporates mainly non-discretionary accruals. Discretionary accruals are associated with management bias.

### **Magnitude in Tax-Book Differences**

Tax-book differences are due to dissimilarities between tax regulations and accounting rules, aggressive accounting behaviour such as earnings management or fraud, and aggressive tax behaviour such as tax avoidance or tax evasion.

Using tax-book differences as a benchmark for assessing earnings quality is not a new idea. Revsine, Collins, and Johnson (2001, p. 654) state that a widening tax-book differences represent a potential danger signal that should be investigated, because it might be an indication of deteriorating earnings quality. To assess earnings quality, they recommend the calculation of ratio of reported earnings to taxable income (Earnings Conservatism ratio (EC)). In their view, an EC ratio close to one indicates that earnings are of high quality. They also highlight the importance of comparing EC ratios between different periods and corporations to identify unusual relationships that require further examination. Similarly, Papelu, Healy and Bernard (2000, p. 3-11) state that an increasing gap between a firm's reported income and its tax income may indicate that the firm's financial reporting to shareholders has become more aggressive.

US studies on the magnitude and trends in tax-book differences report a widening gap during the 1990s between reported earnings and taxable income (Plesko, 2004; Manzon and Plesko, 2001; Mills, Newberry, and Trautman, 2002; Lev and Nissim, 2002). Mills and Newberry (2001) find that listed firms report larger tax-book differences than non-listed ones. They argue that this finding implies that tax-book differences can inform about earnings quality of listed firms. In the same way, Lev and Nissim (2002) and Hanlon (2005) provide evidence that large tax-book differences are associated with lower quality of financial accounting earnings.

Other studies find that IRS audit adjustments increase as tax-book differences increase (Mills, 1998; US Treasury Department, 1999). To the extent that large tax-book differences lead to more scrutiny from the tax authorities, tax aggressiveness will require lowering reported earnings as well in order to avoid an increase in the cost of capital.

According to Yin (2003), it is uncertain whether tax-book differences are caused by firms simply making greater use of known provisions or if firms overstate reported earnings or reduce their tax liability using tax shelters.

Finally, some researchers argue that management may want to reduce tax-book differences to support aggressive tax behaviour by adopting accounting policies that will lower accounting income (Cloyd et al., 1996) or to minimize the risk that aggressive accounting practices will be discovered (Erickson et al., 2004).

### **Limitations of using taxable income as a benchmark to assess earnings quality**

There are a number of relevant factors to consider if taxable income and tax-book differences are to be used to assess earnings quality. The first factor concerns the specific objectives sought in establishing these two figures. The purpose of reported earnings is to provide useful information for economic decision-making while taxable income is meant, among other things, to obtain funds to pay government expenses. In light of these different objectives, taxable income may not be a valid measurement of earnings quality.



The second factor has to do with the basis of the calculation. Accounting rules are intended to reflect the economic substance of transactions and the relations between various entities. For instance, consolidated financial statements are required under GAAP, which is not the case for tax purposes. Also, the impairment of long-lived assets and the setting up of various provisions, which must be accounted for in accordance with GAAP, provide information that is useful for economic decision-making. Such expenses are not tax deductible. Consequently, it can be argued that taxable income is incomplete and as such, does not constitute a valid benchmark to assess earnings quality.

The third factor concerns management's motivations. It is in management's interest to maximize reported earnings and to minimize taxable income and tax payable. Accordingly, significant differences between accounting income and taxable income may be due to effective tax planning rather than earnings management.

It should be noted, however, that the difference between reported earnings and taxable income is mitigated by tax laws in Canada. Reported earnings are the starting point for calculating taxable income<sup>3</sup>. Without this tie in, it would be easier for management to both maximize its reported earnings to reduce its cost of capital and to minimize taxable income to lower its tax liability.

A major constraint of using taxable income as a benchmark to assess earnings quality is its confidential nature. Taxable income is not disclosed under Canadian GAAP. Similar rules apply in the US. As a result, investors can only estimate taxable income based on the income tax expense for the period and the tax rate in effect disclosed in the financial statements footnotes. This estimate may not be suitable in situations where the corporation operates in several jurisdictions, prepares consolidated financial statements or has set up provisions (cushions) for a potential challenge of its income tax returns by tax authorities<sup>4</sup>.

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<sup>3</sup> For instance, at the federal level, corporations reconcile their accounting income and tax income using Schedule 1 of the T-2 income tax return.

<sup>4</sup> The difficulty of estimating taxable income has been noted by financial journalists. For example, an article in Business Week (April 26, 2004) indicated that it is very difficult for sophisticated investors to determine the amount of income taxes a particular corporation must pay and the amount that can be

## Hypothesis Development and Methodology

As discussed previously, research in the US suggests that taxable income may be used as a benchmark to assess earnings quality. This line of research also proposes to investigate the magnitudes and trends of tax-book differences and their relation to firm's future performance. Tax-book differences can also be informative about earnings manipulations or aggressive tax positions.

Earnings that are persistent over time are said to be of high quality. As already discussed, several reasons support the view that taxable income is a valid benchmark to assess earnings quality. However given its limitations, we first verify the relationship between future earnings and taxable income as follows:

Hypothesis 1: Taxable income provides incremental information over earnings before taxes in assessing a firm's future earnings.

To facilitate the analysis of the results, we first validate the relationship between firm's future performance and earnings before taxes (eq. 1) and then, between firm's future earnings and taxable income (eq. 2) using the following models:

$$EBT_{i,t+1}/TA_{i,t+1} = \beta_1 1/TA_{i,t} + \beta_2 SE_{i,t}/TA_{i,t} + \beta_3 EBT_{i,t}/TA_{i,t} + \varepsilon_{i,t} \quad (1)$$

$EBT_{i,t+1}$  ( $EBT_{i,t}$ ) is earnings before taxes of firm  $i$  at time  $t+1$  (time  $t$ ). Earnings before taxes exclude nonrecurring items such as discontinued operations and extraordinary items.  $SE_{i,t}$  is the book value of stockholders' equity of firm  $i$  at time  $t$ . This variable controls for size and for financial leverage. All independent variables are standardized by  $TA_{i,t}$ , the book value of total assets at time  $t$ . The dependent variable is deflated using  $TA_{i,t+1}$ . If  $EBT_{i,t}$  is persistent over time, the coefficient on  $\beta_3$  should be positive.

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deferred indefinitely. Another article from the Wall Street Journal (October 8, 2002) suggested that information included in the tax returns of listed entities be made public.

In equation 2, we replace the variable  $EBT_{i,t}$  by taxable income at time  $t$  ( $TI_{i,t}$ ) as follows:

$$EBT_{i,(t+1)}/TA_{i,(t+1)} = \beta_4 1/TA_{i,t} + \beta_5 SE_{i,t}/TA_{i,t} + \beta_6 TI_{i,t}/TA_{i,t} + \varepsilon_{i,t} \quad (2)$$

If taxable income is informative about firms' future performance, the coefficient on  $\beta_6$  should be positive.

Finally, we test hypothesis one using a model that relates future earnings to total assets, stockholders equity, earnings before taxes and taxable income as follows:

$$EBT_{i,(t+1)}/TA_{i,(t+1)} = \beta_7 1/TA_{i,t} + \beta_8 SE_{i,t}/TA_{i,t} + \beta_9 EBT_{i,t}/TA_{i,t} + \beta_{10} TI_{i,t}/TA_{i,t} + \varepsilon_{i,t} \quad (3)$$

All variables are defined as above. If taxable income provides incremental information over earnings before taxes in assessing next year earnings, coefficients on  $\beta_9$  and  $\beta_{10}$  to be positive.

Since the information about a firm's taxable income is not publicly available, we estimate it using data disclosed in firms' financial statements<sup>5</sup>. Taxable income is calculated as current income tax expense of firm  $i$  at time  $t$  divided by the statutory tax rate of firm  $i$  at time  $t$  or  $TI_{i,t} = CITE_{i,t} / STR_{i,t}$ .

This approach has also been used by Lev and Nissim (2002), Hanlon, Kelly and Shevlin (2003) and Hefflin and Kross (2005). To reflect some particularities of the Canadian context, this formula needs some adjustments. Current income tax expense is adjusted to take into account the capital taxes payable by Canadians large corporation as it is not an income tax. We only reduce current income tax expense when a firm specifically

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<sup>5</sup> It should be noted that taxable income is not public information in Canada and in the US. Schedules detailing the computation of taxable income are usually filed with tax authorities. In Canada, Schedule 1, the form used to reconcile reported earnings with taxable income, is confidential information. Analysts and investors could only infer the amount of taxable income by examining the disclosure of financial statements.

indicates capital taxes as a reconciliation item<sup>6</sup>. The statutory tax rate is the one disclosed in firms' audited financial statements<sup>7</sup>. This rate is more likely to better represent the real tax situation of a firm. Also, it takes into account the geographical characteristics of the companies through Canada, i.e. it is adjusted according to the provinces where the company operates<sup>8</sup>.

We then refer to work of Dechow (1994), Sloan (1996), Xie (2001) and Hanlon (2005). Dechow (1994) reports that net earnings have higher informational content than cash flow from operations even if GAAP accounting implies management discretionary choices. Sloan (1996) and Xie (2001) provide evidence that the persistence of net earnings decreases with the magnitude of accruals and that the decrease is more important for discretionary accruals. They also show that the persistence of net earnings increases with the magnitude of cash flows from operations. In the same line, Hanlon (2005) finds that firm-years with large temporary book-tax differences have lower earnings persistence, cash flows from operations and accruals than firm-years with small book-tax differences. She also reports that discretionary accruals (temporary tax-book differences) are less persistent (one-year ahead) than non-discretionary accruals.

As already discussed, if taxable income incorporates mainly non-discretionary accruals, it should therefore be a better measure of earnings quality as it provides more information than cash flows from operations. We extrapolate from the work of Sloan (1996), Xie (2001), and Hanlon (2005) and stipulate that the persistence of the reported earnings depends on the magnitude of taxable income and of tax-book differences which lead to the second hypothesis as follows:

Hypothesis 2: the magnitude of taxable income and tax-book differences are more informative about a firm's future earnings than cash flows from operations and accruals.

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<sup>6</sup> Canada does not have an AMT based on income for corporations. Instead, large corporations pay a tax on capital that is calculated on the adjusted net assets on the balance sheet.

<sup>7</sup> This rate does not always correspond to the maximum tax rate under the Canadian Income Tax Act.

<sup>8</sup> We compare the rate used with the statutory rate of the provinces. No significant variations have been found.

To test our second hypothesis, we use a modified version of equation 1 which relates future performance to the components of earnings before taxes i.e. taxable income and tax-book differences as follows:

$$EBT_{i,(t+1)}/TA_{i,(t+1)} = \beta_1 TI_{i,t}/TA_{i,t} + \beta_2 TBD_{i,t}/TA_{i,t} + \varepsilon_{i,t} \quad (4)$$

The variables book value of equity and total assets are excluded as they are not significant (see next section). If taxable income and tax-book differences ( $TBD_{i,t}$ ) are informative about firms' future performance, coefficients on  $\beta_1$  and  $\beta_2$  should be positive. To compare our results, we also validate the relation between firms' future performance and cash flows and accruals.

### Sample Selection and Results

Our sample comprises all firms listed at the Toronto Stock Exchange for the period 2000-2005. This period corresponds with the implementation of CICA Handbook Section 3465 *Income Taxes* in Canada. We obtained all financial data from the Stock Guide Database (June 3, 2006) or from published financial statements.

As reported in Table 1, the sample is reduced to exclude firms that were not in operations during the 6-years of the study, regulated firms, income trusts, loss firms for more than a year, and firms that have important operations outside Canada. To this end, a firm that has more than 15% of its assets outside Canada is deemed to have important operations. This information is obtained from the footnotes on segment information published in a firm's financial statements. Table 2 presents firms-years by industry.

Table 3 presents descriptive statistics for various variables. The tax-book differences variable ( $TBD_{i,t}$ ) is positive for more than 75% of firm-years; it has a value of 0.004 in the first quartile. This result implies that earnings before taxes ( $EBT_{i,t}$ ) is higher than taxable income ( $TI_{i,t}$ ) for more than 75% of our sample of firms. This confirms firms'

incentive to report high earnings to boost market value but to reduce taxable income in order to lower cash outflows.

To gain more insights about the tax-book differences variable, we analyze the sources of the differences and classify them as temporary ( $TBD-T_{i,t}$ ) or permanent ( $TBD-P_{i,t}$ ). Our examination indicates that they are mainly due to temporary tax-book differences since they account for 62.5% ( $0.020/0.032$ ) of the total amount (mean). The analysis of the future tax assets and liabilities reveals that the discrepancies are mainly caused by depreciation and amortization. In Canada, depreciation rates for tax purposes are in general higher than the ones used for accounting.

Table 4 presents the Pearson and Spearman coefficients of correlation for the various variables. As expected, earnings before taxes ( $EBT_{i,t}$ ) is positively correlated with earnings before taxes at  $t+1$  ( $EBT_{i,t+1}$ ) and taxable income ( $TI_{i,t}$ ), as shown by the Pearson correlation coefficients of 0.733 and 0.818 respectively. Taxable income ( $TI_{i,t}$ ) is negatively correlated with the variable tax-book differences ( $TBD_{i,t}$ ); the Pearson correlation coefficient is of -0.447. A decrease in taxable income implies an increase in the tax-book differences and vice-versa. Taxable income ( $TI_{i,t}$ ) is positively correlated with  $CFO_{i,t}$ ; the Pearson correlation coefficient is of 0.391. This result indicates the strength of the relationship between these variables. Finally, the Pearson correlation coefficient between  $CFO_{i,t}$  and  $ACCR_{i,t}$  is negative (- 0.812) which is consistent with prior studies (Dechow, 1994; Sloan, 1996; Hanlon, 2005).

As suggested by some authors, we compute the EC ratio for each firm-year in our sample. Table 5 provides a summary of the results which give some insights about the magnitude and trends of the tax-book differences<sup>9</sup>. Panel A displays the results by year and Panel B shows the statistics by industry. Note that the EC ratio corresponds to  $EBT_{i,t}/TI_{i,t}$  i.e. to book-tax differences (and not tax-book differences).

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<sup>9</sup> An analysis for each firm by year is beyond the scope of the study.

The mean EC ratio increases from 2000 to 2003 which is consistent with an increasing trend in tax-book differences during that period. Even though the mean decreases in 2004 and 2005, the ratio is still greater than one. The magnitude of the ratio is very high for some firms in our sample (for instance EC ratio  $> 10$ ). The variation seems to be industry-specific. Indeed, the EC ratio varies greatly for firms in the energy industry (-27.742 to 73.490). The variation is less important for firms in the consuming goods essential industry (0.778 to 5.986). Overall, these results are in line with our expectations.

Table 6 presents the findings for the first hypothesis. Panel A displays the results for the relationship between earnings before taxes at time  $t$  and  $t+1$ . As expected earnings before taxes at time  $t$  is a good predictor of future earnings; the coefficient on  $EBT_{i,t}$  is positive and significant ( $\beta_3=0.704$ ). These results are consistent with the results of prior studies (Hanlon, 2005; Sloan, 1996; Xie, 2001).

Panel B shows the results for hypothesis one which investigates whether taxable income is informative about future earnings. The findings are in line with our expectations. The coefficient on taxable income is positive and significant ( $\beta_6=0.570$ ). These results are consistent with those obtained by Hanlon, Kelly and Shevlin (2003) and Heflin and Kross (2005). Also, a comparison of the  $R^2$  for the two models (54% vs. 45%) suggests that  $EBT_{i,t}$  is a better predictor of future earnings than  $TI_{i,t}$ <sup>10</sup>.

We then investigate whether  $TI_{i,t}$  provides additional information over  $EBT_{i,t}$  to assess firms' future performance. Panel C shows the results. Our findings suggest that both,  $EBT_{i,t}$  and  $TI_{i,t}$  helps predicting future firms' earnings; their coefficients are positive and significant, ( $\beta_9=0.559$  and  $\beta_{10}=0.160$ ). This result is in line with those of Hanlon, Kelly and Shevlin (2003), Lev and Nissim (2004), and Heflin and Kross (2005).

Table 7 presents the findings for hypothesis 2. To facilitate the comparison, we also report the result of the relationship between future earnings and earnings before taxes at time  $t$  (Panel A). The coefficient on  $EBT_{i,t}$  is positive and significant ( $\beta_1=0.707$ ) which

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<sup>10</sup> Even though this comparison is weak, we did not carry out further tests since there is a difference of 20% between these  $R^2$  i.e. 9%/45%.

suggests that earnings before taxes are persistent for next-year earnings. Similar results were presented in Table 6 – Panel A.

As discussed earlier, cash flows from operations are generally used as a benchmark to assess earnings quality. Panel B shows the findings for the model that tests the relation between future earnings for firm  $i$  at time  $t+1$  and cash flows from operations and accruals, both firm  $i$  at time  $t$ . As expected, coefficients on  $\beta_2$  (1.034) and  $\beta_3$  (0.906) are positive and significant. This result suggests that CFO and accruals are informative about firms' future performance. In addition, it seems that the magnitude of cash flow from operations have a greater impact on firms' future earnings than accruals ( $\beta_2 > \beta_3$ ). These findings are in line with those of Sloan (1996) and Xie (2001).

Panel C presents the findings for hypothesis two. The results suggest that both variables are informative about firm's performance at time  $t+1$  as the coefficients on these variables are positive ( $\beta_4=0.724$  and  $\beta_5=0.553$ ) and significant. Moreover, when comparing both coefficients, we conclude that the impact of taxable income on future earnings is more important than tax-book differences ( $\beta_4 > \beta_5$ ).

A comparison of the  $R^2$  for the two models (Panels B and C) suggests that taxable income and tax-book differences (Panel C:  $R^2=55\%$ ) are better indicators of firms' future performance than cash flow from operations and accruals (Panel B:  $R^2=49\%$ ). This finding is in line with our expectations. Recall that taxable income is derived from accruals accounting but it is less subject to management biases.

To investigate the impact of the components of tax-book differences on future earnings, we subdivide total tax-book differences into temporary and permanent components. Following Hanlon (2005), temporary tax-book differences are assumed to be discretionary. If the temporary components are less persistent, the coefficient on  $TBD-T_{i,t}$  should be small and positive. In our test, we also incorporate permanent tax-book differences into the model. However we do not make any prediction about the direction



of the relationship because of the nature of these differences. Permanent components include elements that will never be taxable or deductible.

Panel D displays the results of this test. The coefficients on taxable income and temporary components ( $\beta_6=0.729$  and  $\beta_7=0.715$ ) are very similar which suggests that these variables are both useful in assessing firms' earnings quality. However the magnitude of the coefficient TBD-T is higher than expected. The results also suggest that permanent differences are informative about firms' future earnings but to a lesser degree ( $\beta_8=0.271$ ). These are interesting findings but they need further investigations to better understand their implications<sup>11</sup>.

### **Robustness Tests**

As robustness tests, models in Table 6 are modified to control for industry sectors. To this end, dummy variables are incorporated to the models representing the 8 most important industries as defined in Table 2. Results are shown in Table 8; they are similar to the ones discussed previously.

Similarly we test whether the findings presented in Table 7 are sensitive to industry factor. Again we modify the models and incorporate a variable controlling for industry. The results are presented in Table 9. Overall they are very similar to the ones reported in Table 7.

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<sup>11</sup> The investigations will require the analysis of the information contained in the income tax footnote. For firms in our sample we were able to reconcile the temporary book-tax differences with future tax assets and liabilities for 45% of the firm-years.

## **Conclusion**

The gap between earnings before taxes and taxable income is a reflection of the choices made with respect to accounting policies and estimates, and tax planning. Tax authorities can examine the reconciliation between earnings before tax and taxable income to detect any irregularities. As for investors and financial analysts, this examination is impossible since no reconciliation is published in the financial statements. Further analysis of earnings quality is possible using as a benchmark taxable income and tax-book differences.

In Canada and the US, taxable income may provide information on earnings quality as it is less subject to manipulations and to management biases. For instance, tax law does not allow the deduction of certain expenses such as warranty provisions and restructuring costs reserves, which are generally used in earnings management.

This study investigates whether taxable income and tax-book differences (temporary and permanent components) are good predictors of firms' future performance using a sample of Canadian firms. This is particularly interesting in the European context as Canadian GAAP are closer to IFRS than US GAAP. Overall, the results support our hypotheses. We also find that temporary tax-book differences help predicting firms' future earnings.

To the extent that information about taxable income and tax-book differences is useful for the various financial statement users, the AcSB should address this issue. A better disclosure of income taxes in the financial statements such as a reconciliation of corporation's net income under GAAP to taxable income can provide investors with information of great importance with respect to management tax and financial reporting strategies.

**Table 1**  
**Sample Selection**

<b>Firms listed on the Toronto Stock Exchange</b>		851
<b>Selection criteria</b>		
Firms not in operations during the 6-year of the study	207	
Regulated firms	77	
Income Trusts	49	
Loss firms for more than one year	289	
Firms that have important operations outside Canada	144	
Others	5	771
<b>Total</b>		<b>80</b>

**Table 2**  
**Firms-years by Industry**

Industry		Firms-years
10	Materials	20
20	Energy	58
30	Industries	48
50	Consuming goods not essentials	112
60	Consuming goods essentials	56
80	Information technology	5
90	Real Estate	38
95	Health Care	10
<b>Total</b>		<b>347</b>

**Table 5**  
**Earnings Conservatism (EC) Ratio**

Panel A :

Year	Firms-Years	Mean	Std. Deviation	Min.	Max.	Quartile		
						25%	Median	75%
2000	52	1.868	4.349	-19.902	18.025	0.992	1.136	1.824
2001	56	1.816	4.151	-18.250	19.538	1.000	1.230	1.829
2002	66	2.624	13.758	-82.262	60.883	1.052	1.361	2.044
2003	70	3.840	12.050	-27.742	73.490	0.969	1.239	2.013
2004	62	1.018	3.841	-24.262	12.314	0.944	1.126	1.551
2005	8	1.512	0.744	0.963	2.913	0.997	1.098	2.189
Total	314	2.280	9.016	-82.262	73.490	0.992	1.227	1.840

Panel B :

Industry	Firms-Years	Mean	Std. Deviation	Min.	Max.	Quartile		
						25%	Median	75%
10	20	1.206	0.453	0.514	2.153	0.912	1.064	1.541
20	40	4.568	14.243	-27.742	73.490	1.195	1.975	3.296
30	48	2.352	7.317	-24.262	31.700	0.990	1.138	1.738
50	109	2.747	8.116	-20.051	60.883	0.948	1.125	1.600
60	56	1.334	0.685	0.779	5.986	1.044	1.240	1.423
80	5	3.115	1.102	1.875	4.862	2.236	3.105	3.999
90	26	-0.923	16.729	-82.262	7.766	1.050	1.496	3.409
95	10	3.055	5.646	-4.355	17.233	1.106	1.474	3.963
Total	314	2.280	9.016	-82.262	73.490	0.992	1.227	1.840

**Table 6**  
**Future Earnings and Taxable Income**

Panel A :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_1 1/TA_{i,t} + \beta_2 SE_{i,t}/TA_{i,t} + \beta_3 EBT_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_2$	?	0.013	0.496
$\beta_3$	+	0.704	0.000
$R^2$	54%		

Panel B :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_4 1/TA_{i,t} + \beta_5 SE_{i,t}/TA_{i,t} + \beta_6 TI_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_5$	?	0.027	0.176
$\beta_6$	+	0.570	0.000
$R^2$	45%		

Panel C :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_7 1/TA_{i,t} + \beta_8 SE_{i,t}/TA_{i,t} + \beta_9 EBT_{i,t}/TA_{i,t} + \beta_{10} TI_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_8$	?	0.010	0.588
$\beta_9$	+	0.559	0.000
$\beta_{10}$	+	0.160	0.005
$R^2$	55%		

Variables are defined as follows:  $EBT_{i,t+1}$  ( $EBT_{i,t}$ ) is earnings before taxes for firm i at time t+1 (time t).  $SE_{i,t}$  is the book value of shareholders' equity for firm i at time t.  $TI_{i,t}$  is taxable income for firm i at time t. All variables are standardized using total assets for firm i at time t or t+1 ( $TA_{i,t}$  or  $TA_{i,t+1}$ ).

**Table 7**  
**Future Earnings, Cash Flows from Operations, Taxable Income**  
**and Tax-Book Differences**

Panel A:

$EBT_{i,t+1}/TA_{i,t+1} = \beta_1 EBT_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_1$	+	0.707	0.000
$R^2$		54%	

Panel B :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_2 CFO_{i,t}/TA_{i,t} + \beta_3 ACCR_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_2$	+	1.034	0.000
$\beta_3$	+	0.906	0.000
$R^2$		49%	

Panel C :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_4 TI_{i,t}/TA_{i,t} + \beta_5 TBD_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_4$	+	0.724	0.000
$\beta_5$	+	0.553	0.000
$R^2$		55%	

Panel D :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_6 TI_{i,t}/TA_{i,t} + \beta_7 TBD-T_{i,t}/TA_{i,t} + \beta_8 TBD-P_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectations	Coefficient	Sig.
$\beta_6$	+	0.729	0.000
$\beta_7$	+	0.715	0.000
$\beta_8$	?	0.271	0.003
$R^2$		57%	

Variables are defined as follows:  $EBT_{i,t+1}$  ( $EBT_{i,t}$ ) is earnings before taxes for firm i at time t+1 (time t).  $TI_{i,t}$  is taxable income for firm i at time t.  $TBD_{i,t}$  is total tax-book differences for firm i at time t.  $TBD-T_{i,t}$  is the temporary component of  $TBD_{i,t}$  for firm i at time t.  $TBD-P_{i,t}$  is the permanent component of  $TBD_{i,t}$  for firm i at time t.  $CFO_{i,t}$  is cash flows from operations for firm i at time t.  $ACCR_{i,t}$  is the amount of accruals for firm i at time t. It is estimated as the difference between  $EBT_{i,t}$  and  $CFO_{i,t}$ . All variables are standardized using total assets for firm i at time t or t+1 ( $TA_{i,t}$  or  $TA_{i,t+1}$ )

**Table 8**  
**Future Earnings and Taxable Income Controlling for Industries**

Panel A :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_1 1/TA_{i,t} + \beta_2 SE_{i,t}/TA_{i,t} + \beta_3 EBT_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_2$	?	0.013	0.535
$\beta_3$	+	0.682	0.000
$R^2$	55%		

Panel B :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_4 1/TA_{i,t} + \beta_5 SE_{i,t}/TA_{i,t} + \beta_6 TI_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_5$	?	0.022	0.298
$\beta_6$	+	0.591	0.000
$R^2$	52%		

Panel C :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_7 1/TA_{i,t} + \beta_8 SE_{i,t}/TA_{i,t} + \beta_9 EBT_{i,t}/TA_{i,t} + \beta_{10} TI_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_8$	?	0.010	0.612
$\beta_9$	+	0.443	0.000
$\beta_{10}$	+	0.253	0.000
$R^2$	57%		

Variables are defined as follows:  $EBT_{i,t+1}$  ( $EBT_{i,t}$ ) is earnings before taxes for firm i at time t+1 (time t).  $SE_{i,t}$  is the book value of shareholders' equity for firm i at time t.  $TI_{i,t}$  is taxable income for firm i at time t. All variables are standardized using total assets for firm i at time t or t+1 ( $TA_{i,t}$  or  $TA_{i,t+1}$ ).

**Table 9**  
**Future Earnings, Cash Flows from Operations, Taxable Income**  
**and Tax-Book Differences Controlling for Industries**

Panel A :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_1 EBT_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_1$	+	0.707	0.000
$R^2$		54%	

Panel B :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_2 CFO_{i,t}/TA_{i,t} + \beta_3 ACCR_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_2$	+	0.996	0.000
$\beta_3$	+	0.872	0.000
$R^2$		50%	

Panel C :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_4 TI_{i,t}/TA_{i,t} + \beta_5 TBD_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_4$	+	0.701	0.000
$\beta_5$	+	0.449	0.000
$R^2$		57%	

Panel D :

$EBT_{i,t+1}/TA_{i,t+1} = \beta_6 TI_{i,t}/TA_{i,t} + \beta_7 TBD-T_{i,t}/TA_{i,t} + \beta_8 TBD-P_{i,t}/TA_{i,t} + \varepsilon_{i,t}$			
	Expectative	Coefficient	Sig.
$\beta_6$	+	0.711	0.000
$\beta_7$	+	0.618	0.000
$\beta_8$	?	0.182	0.060
$R^2$		59%	

Variables are defined as follows:  $EBT_{i,t+1}$  ( $EBT_{i,t}$ ) is earnings before taxes for firm i at time t+1 (time t).  $TI_{i,t}$  is taxable income for firm i at time t.  $TBD_{i,t}$  is total tax-book differences for firm i at time t.  $TBD-T_{i,t}$  is the temporary component of  $TBD_{i,t}$  for firm i at time t.  $TBD-P_{i,t}$  is the permanent component of  $TBD_{i,t}$  for firm i at time t. It is estimated as the difference between  $EBT_{i,t}$  and  $CFO_{i,t}$ . All variables are standardized using total assets for firm i at time t or t+1 ( $TA_{i,t}$  or  $TA_{i,t+1}$ )



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